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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,490	01/09/2002	Yuki Nakamura	2271/66507	9287

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EXAMINER

ANGEBRANNDT, MARTIN J

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 09/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/044,490

Applicant(s)

NAKAMURA ET AL.

Examiner

Martin J. Angebranndt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/7/06, 7/17/06 & 6/15/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21, 24, 27, 30 and 49-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21, 24, 27, 30 and 49-57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6/15/06.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

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1. The response of the applicant has been read and given careful consideration. Responses to the arguments of the applicant are presented after the first rejection to which they are directed. The priority document have been received and reviewed. The subject matter of claims 21 and those dependent upon it are accorded the date 01/12/2001 (filing date of JP 0003084). The subject matter of claims 44,47 and those dependent upon them are accorded the date 03/01/2001 (filing date of JP 0005244). The subject matter of claims 51 and those dependent upon it are accorded the date 01/10/2001 (filing date of JP 0003083). The rejections of the previous office action not repeated below are withdrawn based upon the arguments, the perfected priority and the amendment of the applicant.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 21,24,27,30,44-50 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for optical recording media comprising a recording layer formed on a substrate, does not reasonably provide enablement for optical recording media without a substrate. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims.

The specification does not disclosed the recording films as self supporting.

The applicant may also wish to consider including a substrate in the recitation of claims 21,44 and 47

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4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 51-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kikukawa et al. '722.

Example 3 uses $\text{Ag}_6\text{In}_4\text{Sb}_{62}\text{Te}_{26}\text{Ge}_{0.2}$. The structure is that of example 1 and includes a substrate (11/23-58). The Te range may be ~10-50% and the Sb content may be ~40-90%.

It would have been obvious to modify the example 3 by changing the composition the Sb content and decreasing the Te content to be $\text{Ag}_6\text{In}_4\text{Sb}_{64}\text{Te}_{24}\text{Ge}_{0.5-2}$ with a reasonable expectation of forming a useful optical recording medium based upon the values being within the range.

The applicant is invited to provide comparative data to obviate the rejection. The argument that the examiner is applying an obvious to try standard is without merit as the changes

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suggested by the examiner maintain the composition within the compositional ranges described and therefore is accorded a reasonable expectation of success in forming an useful optical recording medium. The rejection stands.

7. Claims 51-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kikukawa et al. '070.

Experiment 3, composition 2, which uses $\text{Ag}_{5.8}\text{In}_4\text{Sb}_{62.6}\text{Te}_{25.6}\text{Ge}_{1.9}$. The structure is that of example 1 and includes a substrate (7.63-8/56). The Te range may be ~8-40% and the Sb content may be ~35-80%.

It would have been obvious to modify the example 3 by changing the composition within the described ranges for the Te and Sb content to be $\text{Ag}_{5.8}\text{In}_4\text{Sb}_{64.3}\text{Te}_{23}\text{Ge}_{1.9}$ with a reasonable expectation of forming a useful optical recording medium.

The applicant is invited to provide comparative data to obviate the rejection. The argument that the examiner is applying an obvious to try standard is without merit as the changes suggested by the examiner maintain the composition within the compositional ranges described and therefore is accorded a reasonable expectation of success in forming an useful optical recording medium. The rejection stands.

8. Claims 21,24,27,30,33,36,39,42 and 49-50 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Yamada et al. EP 0717404.

Examples 2 and 3 in table 2 have the compositions shown in tables 2 as the recording layer in media comprising a polycarbonates substrate, a 200 nm ZnS-SiO_2 lower dielectric layer, a 25 nm AgInTeSb recording layer, a 30 nm ZnS-SiO_2 upper dielectric layer, a 100 nm Al alloy reflective layer and a 5 micron UV cured resin as the protective layer. The sum of the Te and Sb

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are 91 and 85.4 % respectively. Comparative examples 1 and 2 use the same structure and meet the limitations of the claims. (table 2, cont). The sum of the Te and Sb are 99.5 and 95.9 % respectively. The benefits of adding 2% nitrogen is illustrated in table 3 on page 12. The addition of Ti, Cr or Si to the reflective layer is disclosed. (8/29-31). The maximum number of overwrites is defined by the number before the 1 sigma jitter is above 35 ns. (13/50-51).

With respect to claims 21,24,27,30,33,36,39 and 42, the examiner notes that all the media cited have been initialized and that these initializations are equivalent to that recited in the claims and that the applicant has the burden of proving otherwise through testing and the presentation of declaration evidence as set forth in MPEP 2113 as the claims are directed to products by process. The applicant argues that they have found through extensive experimentation, that the when powers above 1000 J/m^2 are used, the media have high jitter. **The examiner notes that the extensive data referred to correspond to the 25 tests in example 24 (table 4) only corresponds to a single medium with an AgInTeSb alloy layer and a specific layered structure. The examiner notes that at least some of the media described in the reference have excellent disc characteristics including $C/N > 55 \text{ dB}$ and erasability $< -35 \text{ dB}$. (page 9) The showing by the applicant is nowhere near the scope of coverage sought. The rejection stands.**

The applicant is claiming the medium in a product by process format, therefore contrary to the position of the applicant, a reasonable assertion by the examiner, based in part upon the properties of the media reported in the prior art for the media of the of the prior art, that the media of the prior art and the claimed media are the same places the burden firmly upon the applicant to show that the process of the prior art does not result in

media within the scope of the coverage sought. There are no requirements in MPEP 2113 that the exact process used be the same. Phase change recording media are conventionally initialized in the art prior to use. The applicant's characterization of the reference's teachings (as well as those of the other references applied) through mere restatement of the abstract is nowhere near a reasonable treatment of the complete teachings of the reference.

The examiner points to the high ratings of the various examples cited. These characteristics would not be present if the recording layer s was damaged. Further, applicant's own specification states "[0224] When the values shown in FIGS. 4 and 5 are compared, it is found that DOW 1 jitter tends to increase with decreasing energy density E. The range found for the E value is $E > 1000 \text{ J/m}^2$, for which jitter exceeds the 35 nsec that is specified as a standardized jitter value in the Orange Book " Bearing in mind the recording medium needs to conform with standards to be player reliably. The examiner holds that it is anticipated by the cited examples as it makes no sense to describe a medium as acceptable if it cannot be played on a conventional CD player. The rejection stands.

The claims rejected under this heading are to the medium resulting from the process (ie product by process), not the process. The examiner has pointed to the performance characteristics of the media, which meet or exceed the benefits ascribed to the resultant media. Therefore the examiner is correct in making the rejections asserted. The rejection stands.

9. Claims 21,24,27,30 and 49-50 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Yamada et al. EP 0735158.

Examples 3, 5-7 comparative example 2 and 3 in table 2 have the compositions shown in tables 2 as the recording layer in media comprising a polycarbonates substrate, a 200 nm ZnS-

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SiO₂ lower dielectric layer, a 25 nm recording layer, a 30 nm ZnS-SiO₂ upper dielectric layer, a 100 nm Al alloy containing 1 % Si as the reflective layer and a 10 micron UV cured resin as the protective layer. The sum of the Te and Sb are 85.5, 92,9291 and 94.5 % respectively. Example 10 in table 2 on page 13 also includes nitrogen. The addition of various elements to the recording layer is disclosed. (7/48-52). The use of various alloys of Al, Au, Ag and Cu are disclosed.

(9/26-27)

In addition to the arguments above, the examiner notes that example 10 undergoes 15,000 overwrites before experiencing a sudden increase in jitter (13/47), similarly examples 3 and 5-7 are useful with 7,000, 10,000, 8,000 and 10,000 overwrites before the jitter increases. The rejections stand.

The claims rejected under this heading are to the medium resulting from the process (ie product by process), not the process. The examiner has pointed to the performance characteristics of the media, which meet or exceed the benefits ascribed to the resultant media. Therefore the examiner is correct in making the rejections asserted. The rejection stands.

10. Claims 21,24,27,30 and 49-50 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Iwasaki et al. JP 03-240590.

See examples E and F in table 1 (page 5), which do not seem to have an increase in C/N or jitter after 10,000 overwrites.

See the response above as no further arguments have been directed at this rejection.

11. Claims 21,24,27,30 and 49-50 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Iwasaki et al. JP 04-078031.

See examples E and F in table I-1 (page 7), which do not seem to have an increase in C/N or jitter after 10,000 overwrites.

See the response above as no further arguments have been directed at this rejection.

12. Claims 21,24,27,30 and 49-50 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Yuzurihara et al. JP 11-070737.

Examples 21,24 and 26-29 in tables 2 and 3 have the compositions shown in these tables as the recording layer in media comprising a polycarbonates substrate, a 170 nm ZnS-SiO₂ lower dielectric layer, a 18 nm recording layer, a 20 nm ZnS-SiO₂ upper dielectric layer, a 120 nm Al alloy containing Ti as the reflective layer and a UV cured resin as the protective layer. The sum of the Te and Sb are 90.4 for example 21 and 89.2 % for the others. Note that addition of nitrogen to the recording layers in examples 27-29.

Note in examples example 21 is able to be used for 21,000 overwrites and example 18 is useful for 35,000 overwrites before jitter increases.

See the response above as no further arguments have been directed at this rejection. Also see figure 2.

13. Claims 21,24,27,30,49-54 and 57 are rejected under 35 U.S.C. 102(a) as being fully anticipated by Miura et al. JP 2002-002116.

See examples 8 and 22 in table 1 on page 7. See the composition described with respect to example 4,5,14,16-18,23 and 24 in table 1 in column 11, which has the structure described in [0031]. Reflective layers compositions are described in [0025].

See the response above as no further arguments have been directed at this rejection. Note that jitter is measured in the last column of the table 2.

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14. Claims 21,24,27,30 and 49-50 are rejected under 35 U.S.C. 102(e) as being fully anticipated by Miura et al. '121.

See examples 8 and 22 in table 1 on page 7.

See the response above as no further arguments have been directed at this rejection. Jitter is disclosed as 7% (9/9).

15. Claims 21,24,27,30 and 44-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over **either one of** Yamada et al. EP 0717404, Yamada et al. EP 0735158, Iwasaki et al. JP 03-240590 **or** Yuzurihara et al. JP 11-070737, **in view of** Ando et al. '175 and either of Suzuki et al. EP 1111598 **or** Suzuki et al. '780.

Ando et al. '175 describes the embossing of data relating to disk size, read out rate, recording density, serial numbers, linear velocity conditions, read power, peak power, base power and manufacture information (15/55-16/9)

Suzuki et al. EP 1111598 teach the determination of the performance characteristics of an optical recording medium including the optimum recording power [0021] and the sensitivity of the medium (gamma) [0016]. The use of both of these allows a range of useful laser powers and prevents selection of an improper laser power. [0021].

Suzuki et al. '780 teach the determination of the performance characteristics of an optical recording medium including the optimum recording power (abstract and 4/53+) and the sensitivity of the medium (gamma) (3/3-35 and 4/12-5/59). The use of both of these allows a range (margin) of useful laser powers and prevents selection of an improper laser power. (4/12-5/59).

To support the assertion that embossing information relative to the performance characteristics of the optical recording media would have been obvious, the examiner cites Ando et al. '175 which teaches the provision of control data and specification data for the optical recording medium in a non-write-able portion of the medium and Suzuki et al. EP 1111598 or Suzuki et al. '780 which describe specific methods of characterizing the performance and holds that it would have been obvious to one skilled in the art to modify the media of **either one of** Yamada et al. EP 0717404, Yamada et al. EP 0735158, Iwasaki et al. JP 03-240590 or Yuzurihara et al. JP 11-070737 by adding performance data such as that described by either of Suzuki et al. EP 1111598 or Suzuki et al. '780 to prevent improper choice of laser powers and to provide this as embossed information as described by Ando et al. '175 to allow the user for forgo the optimization process.

The applicant's arguments neglects to recognize that the values of R and S actually correspond to real parameters in the recording process, but these values are not recorded in the medium as the values of P_i and P_o are, but are chosen when writing to the medium. These really limit the process of use, not the medium as they are never written into the medium. The examiner reiterates that the claims are to the media, not the process of use. Were the claims directed to the process of use, the applicant's arguments would be at least more persuasive as the reference determines the same basic information (the optimum operating parameters) for the medium. In particular the optimum recording power range and the sensitivity of the medium.

The only information recorded is that of the test runs, The claims do not recite that the values of S or R are stored on the medium. The applicant should insert language clearly stating this into the claims and address the issue raised by the teachings of Ando et al. '175. The

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recording of test runs is taught in Suzuki et al. EP 1111598 or Suzuki et al. '780. The current language describes selecting the values of S and R and calculating other, but does not describe where they are stored. Currently this includes both on the media and also on another drive on the computer. The rejection stands.

16. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

17. Claims 51-57 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2,4,6,7,9,11 and 13-14 of U.S. Patent No. 6592958. Although the conflicting claims are not identical, they are not patentably distinct from each other because the current claims and those of the patent overlap and provide coverage for the same subject matter.

The applicant argues that media of the instant claims where the media have the composition of $\text{Ag}_{0.1-7}\text{In}_{2-10}\text{Sb}_{64-92}\text{Te}_{5-26}\text{Ge}_{0.3-3}$ are not obvious over the media of Nakamura et al. 958 which claim $\text{Ag}_{0.1-5}\text{In}_{5-13}\text{Sb}_{62-73}\text{Te}_{22-26}\text{Ge}_{0.3-3}$ recording layers. The examiner has the position that a timewise extension of the monopoly accorded the applicant is unjustifiably extended for

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the embodiments where the recording layer composition is $\text{Ag}_{0.1-5}\text{In}_{5-10}\text{Sb}_{62-73}\text{Te}_{22-26}\text{Ge}_{0.3-3}$. The rejection stands.

18. Claims 51-57 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-14, 17-25 and 27-32 of copending Application No. 09/996171 (US 2002/0110063). Although the conflicting claims are not identical, they are not patentably distinct from each other because the current claims and those of the copending patent overlap and provide coverage for the same subject matter.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

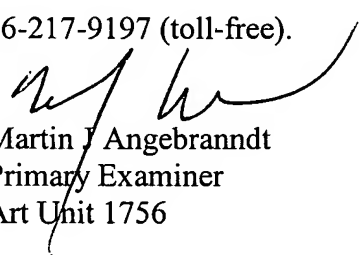
The applicant argues that media of the instant claims where the media have the composition of $\text{Ag}_{0.1-7}\text{In}_{2-10}\text{Sb}_{64-92}\text{Te}_{5-26}\text{Ge}_{0.3-3}$ are not obvious over the media of Application No. 09/996171 which claim $(\text{AgGe})_{0.1-7}(\text{Ga,Bi,In})_{1-15}\text{Sb}_{61-85}\text{Te}_{20-30}$ recording layers. The examiner has the position that a timewise extension of the monopoly accorded the applicant is unjustifiably extended for the embodiments where the recording layer composition is $\text{Ag}_{0.1-6.7}\text{In}_{2-10}\text{Sb}_{64-85}\text{Te}_{20-26}\text{Ge}_{0.3-3}$. The rejection stands.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J. Angebrannndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Martin J. Angebranndt
Primary Examiner
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09/20/2006